

ART. 6. THREE INTERESTING LEPIDOPTERA FROM  
THE PHILIPPINES

BY HARRY K. CLENCH

Associate Curator, Section of Insects and Spiders  
Carnegie Museum

Some twenty-five years ago Carnegie Museum received a small collection of butterflies and moths made by C. F. Clagg on the island of Mindanao, Philippine Islands. With the exception of a small amount taken at or near Davao, most of Mr. Clagg's material comes from rather high elevations in the mountainous southeastern part of the island and is, thus, of considerable interest.

For several reasons it is not feasible to prepare a complete list of his captures. I hope, however, from time to time to be able to publish on some of his more noteworthy species. In an earlier paper (Clench, 1953) two new agaristid moths were described from this material. The present note considers two butterflies, one new and the other hitherto known only from the unique type, to which I have added a new agaristid moth recently received from another source but closely related to one of those taken by Mr. Clagg and discussed in the paper referred to above.

***Delias levicki* Rothschild (Pieridae)**

Rothschild described this rare species (Rothschild, 1927) from a single male from Mindanao, no more exact localization of the specimen being known. Talbot (1928) published on a similar specimen from Mt. Apo. In view of its slight but undeniable differences from *levicki* as well as the unknown origin of the latter, Talbot came to the entirely reasonable conclusion that his specimen represented a Mt. Apo subspecies of *levicki* and that the latter accordingly must have been taken on some other mountain or range on the island. He therefore proposed for his specimen the name *Delias levicki apoensis* and later (Talbot, 1937, p. 402, plate 50, fig. 1) published a figure of the type.

Among Mr. Clagg's captures is a single female (Galog R., Mt. Apo, 6000 ft., S. Mindanao) agreeing well with Talbot's redescription and figure (Talbot, 1937, plate 62, fig. 3) of the *levicki* holotype, save in the following particulars. The ground color above is a pale yellow rather than the creamy white of *levicki*, the hind wing being further faintly tinted with greenish. The subterminal spots are smaller, less definite in outline and darker, almost orange yellow, especially subapically on the fore wing. On the under surface there is no white patch at the fore wing cell-end and the veins of the hind wing are not white, or only faintly so on the median veins only. The subterminal "yellowish olive" band of *levicki* is feebly indicated, barely recognizable.

In view of this evidence of the occurrence of *levicki* on Mt. Apo (and whether or not the above differences are only individual in character) it is clear that *apoensis* Talbot should be recognized as a full species, occurring with *levicki* and not replacing it geographically.



*Danaus apoxanthus*, sp. nov. (Danaiidae)

Frons black-brown with a median pale yellowish line and a spot of similar color below each antennal base. Palpi with second segment appressed to front, yellow with a ventro-mesal and a ventro-lateral longitudinal black-brown line and basally and apically black laterally; third segment porrect, black with a yellow line dorsally and ventrally, each broadest at base. Eyes bordered dorso-mesad by a yellow dash and posteriorly by a yellow line; posterior to antennal bases and well between the eyes a pair of cuneiform yellow spots. Antenna black, very faintly tinged with ruddy, minutely dark fulvous at extreme apex; club gradually incrassate but strong, its greatest diameter about 2.5 times that of middle of shaft. Patagia black-brown with a pair of rather large yellow spots dorsally. Tegulae black-brown with a yellow spot anteriorly just below base of fore wing costa; a larger yellow spot at, or just above, level of costa; the whole narrowly bordered with yellow. Thorax dorsally black-brown with longitudinal yellow line from one end to the other; laterally with long, sparse yellowish hair-scales. Thorax ventrally with the black-brown ground color almost obscured by profuse, rather large yellow spots. Legs brown, paler than body color; rather strongly marked with yellow on fore tibia, mesad on mid and hind femora and exposed portions of trochanters. Abdomen dorsally dark gray with a tint of brown; a dorso-lateral yellowish white longitudinal streak from base to about middle and a much fainter mid-dorsal pale streak from base to about one-fourth; ventrally pallid, rather yellowish pale gray; pale yellowish without gray transversely on distal margins of sterna.

*Upper side*

*Male.* Both wings bright reddish-brown darkening abruptly to dark, almost blackish-brown in outer half of post-discal area and very narrowly on costa. Hyaline areas on both wings bright yellowish with a tint of green, in worn specimens (chemical action?) brownish; arranged in a pattern as follows. Fore wing with a single longitudinal discal cell patch from base to very near cell apex; along costal half of cell it is clouded over with reddish-brown scales and along the costal border of the cell it is completely replaced by the ground; a subapical hyaline patch or band crosses diagonally from costa opposite cell-end to midway out on  $M_2$ , composed of juxtaposed spots as follows. One in  $R_1$ - $R_2$  twice as long as wide, filling interspace to as far basad as cell-end; a tear-drop shaped spot in  $R_2$ - $R_3$  filling base of interspace; a minute dot (often absent) in base of  $R_3$ - $R_{4-5}$ ; a cuneiform one filling base of  $R_{4-5}$ - $M_1$ ; a subquadrate one in  $M_1$ - $M_2$  reaching basad not quite as far as cell-end and a little over three times as long as wide, filling interspace width; an irregularly subquadrate one in  $M_2$ - $M_3$  filling interspace and larger in middle (due to bowing of veins) than at either end, both ends excavated and the basal edge lying opposite middle of preceding; just before margin a row of five oval spots, one each in interspaces  $R_3$ - $R_4$ ,  $R_5$ - $M_1$ ,  $M_2$ - $M_3$ ; relative sizes as follows: small or absent, largest, smaller, smaller, occasionally absent, larger; base of  $M_3$ -Cu<sub>1</sub> without a spot other than a feeble appearance of the one

beneath which may show through; base of  $Cu_1$ - $Cu_2$  with a pair of subquadrate, variably shaped spots, large, but not entirely filling interspace, separated by a transverse reddish-brown band or line. Base of  $Cu_2$ -2A with an elongate patch, usually washed with reddish-brown scales and with a definite though faint slender longitudinal streak of ruddy brown through it from its base to its distal end. In  $M_3$ - $Cu_1$ - $Cu_2$ -2A before margin a series of rather large round spots subequal in size (the first slightly larger). The submarginal paired dots in each interspace, so characteristic of most *Danaus*, are here almost completely lost. They appear faintly from  $M_3$  to  $Cu_2$  in one male (paratype) but not in holotype. Hind wing with costa above Rs grayish with a hyaline elongate streak and a subterminal dot. Discal cell filled with a hyaline patch save along costal edge to base of  $M_1$  and along lower border between bases of  $M_2$  and  $Cu_2$ , these edges being ruddy brown, the former shading to grayish basad. A hyaline spot in base of  $M_1$ - $M_2$ , longest along cell and along  $M_1$ , shortest along  $M_2$  and across from there to  $M_1$ , broadly separated from all veins; post-discal hyaline spots in bases of  $Rs$ - $M_1$  and  $M_2$ - $M_3$ - $Cu_1$ , absent in  $M_1$ - $M_2$  or present only as a small elongate streak; extreme base of  $Cu_1$ - $Cu_2$  with a hyaline triangular spot in angle between  $Cu_2$  and cell;  $Cu_2$ -2A with a deeply bifid elongate hyaline spot, each branch acutely pointed, reaching two-thirds along 2A, the branch along  $Cu_2$  rather shorter; 2A-3A with a long slender spot similar to the 2A half of the preceding and reaching barely farther; between 3A and inner margin with a similar but more whitish and slightly shorter one. Before outer margin a row of round, single ( $Rs$ - $M_3$ ) or oval, double ( $M_3$ - $Cu_2$ ) spots. Two-thirds out on  $Cu_2$  an oval black scent-patch; on 2A adjacent to it a round gray scent-patch, the vein slightly swollen through it.

*Female.* Similar to the male, with the following exceptions. Fore wing with discal cell more washed with ruddy brown scales, as also basal spot in  $Cu_1$ - $Cu_2$  (so much so that the spot is virtually absent) and the elongate spot in  $Cu_2$ -2A. The second spot out in cell  $Cu_1$ - $Cu_2$  is differently shaped, being diagonally elongate (basad towards  $Cu_1$ , distad towards  $Cu_2$ ). Hind wing. Hyaline area in cell narrower; elongate hyaline patches or streaks from  $Cu_2$  to inner margin shorter; androconial patches absent.

#### *Under side*

*Male.* As on upper surfaces except as follows. Distal black-brown is here rather pallid gray-brown, which furthermore runs along inner margin of fore wing below 2A to base. Hind wing with basal and discal ruddy brown very feebly developed, almost all replaced by pallid gray-brown. Hyaline areas of both wings similar in size and location save that the basal portions on fore wing (in discal cell and in bases of cells  $M_3$ -2A) less washed with ground color scales; a basal spot in  $M_3$ - $Cu_1$  not present on upper side, though sometimes showing through. Scent-patch on  $Cu_2$  jet black, the other (2A) grayish, barely visible, though the inflation of the vein through it is more noticeable here than above.

*Female.* Similarly different from female upper surface. Fringe of both sexes black above, gray below, broadly but inconspicuously paired white in each interspace and white along hind wing inner margin.

*Length of fore wing.* Males 40.0 (paratype), 41.5 (holotype); females both 45.0 mm.

*Holotype* and *allotype*, Seliban River, Mt. Apo, 7000 ft., S. Mindanao, Philippine Islands, 21.ix.1930 (C. F. Clagg); C. M. Ent. Acc. No. 9163. *Paratypes*: One male and one female, Sibulan River, Mt. Apo, 2000 ft., 11.v.1930 (Clagg), same accession number. All types, C.M. Ent. type series no. 188.

*Remarks.* It is surprising that so striking a species has hitherto escaped notice, the more so as Mt. Apo has been collected on several times in the past.

*D. apoxanthus* has no very close relatives, though it clearly belongs in Fruhstorfer's "Artengruppe *Chittira* Moore" (Fruhstorfer, 1910), equivalent to Talbot's "*Melaneus* group" (Talbot, 1943). Talbot, of course, was entirely correct in removing the New Guinean *weiskei* to a group of its own. A tentative key to this group, as thus delimited, might begin as follows:

- 1a. Dark ground color of upper surface different on fore wing (black-brown) and hind wing (chestnut red).....*tytia* and subspecies
- b. Ground color similar on both wings, though varying from one form to another ..... 2
- 2a. Antesubmarginal spots of hind wing above  $R_s$  to  $M_3$  duplex as are those from  $M_3$  to  $Cu_2$  (the pair in  $R_s-M_1$  often fused, however).....
- .....*albata* and subspecies
- b. These spots single (though duplex from  $M_3$  to  $Cu_2$ ).....all others

The forms keying out to couplet 2b form an assemblage with specific determinations and delimitations still extremely doubtful. Neither Fruhstorfer (1910) nor Talbot (1943) is of any help in establishing specific characters within this group, though I am certain that such characters exist, as examination of most of the named entities suggests. Both these authors had knowledge of the male genital structures, yet neither has communicated this information in usable form.

Pattern characters in this group, however, are so many and so helpful that I am at a loss to understand why these also have been so little used. Neither of the characters mentioned in the key above has ever been pointed out as *indicative of species*, yet they are visible at first glance.

*D. apoxanthus* will key out in the above table to this troublesome couplet 2b. From among the many species which belong here it is difficult to single out one of them as being the closest relative. After careful comparison, however, I believe that it must come closer to *D. phyle* Felder than to any other. The two agree in the transverse band-like appearance of the subapical spots of the fore wing, absence of a longitudinal dark bifid streak in the hind wing discal cell, presence of a feeble one in cell  $Cu_2-2A$  of the fore wing, costad obsolescence by gradual shading over of the hyaline patch in the fore wing discal cell. The androconial patches of both are similar in position and structure though those of *apoxanthus* are only about half as large as those of *phyle*. The abdomens of both are similarly colored save that in *apoxanthus* it is ventrally rather more yellowish.

Distinctions between the two are many. Besides the color of the upper surface ground (uniform black-brown in *phyle*; ruddy brown, shading distally to black-brown in *apoxanthus*) and of the hyaline markings (pale bluish-green in *phyle*; yellowish with a greenish tint in *apoxanthus*), there are these differences in pattern. Subapical spots of fore wing larger and more nearly confluent, the one in  $M_2-M_3$  basally and distally excised; absence of the two basal spots in  $M_3-Cu_1$ ; absence of the basal spots in  $M_2-M_3-Cu_1$  on hind wing; enlarged submarginal spots (which in *phyle* are further completely gone from  $M_3$  to  $Cu_2$ ) of hind wing and, to a lesser extent; of fore wing as well.

**Philippodamias**, gen. nov. (Agaristidae)

Genotype: *Philippodamias jocelyna*, sp. nov.

Antennae subapically thickened, apically tapering; the thickest portion about 2.5 times the diameter of the shaft; frons with a slightly raised median prominence, but no protuberance, and completely covered with scales and hair; palpi with first two segments fringed ventrally with long hair, upturned, the apex of the second reaching about to middle of eye; the third segment with appressed scales, about half the length of second, pointed and porrect; eyes naked; tongue fully developed; legs with middle and hind femora fringed ventrally with rather sparse long hairs; middle and hind tibiae with appressed scales and hairs; middle tibia with apical, hind tibia with apical and subapical pairs of spurs, the inner one of each pair being twice or more the length of the outer; tarsal claws of all legs with a rather small inner tooth; approximate lengths of the leg segments are as follows. (These measurements were made with an ocular grid micrometer on a dissecting microscope from the legs *in situ* and hence must be regarded as approximate only. For each leg is given in millimeters, respectively: femur, tibia, tarsus I, tarsus II-V exclusive of claws.) Fore leg, 5.2, 3.1, 2.1, 3.0; middle leg, 6.4, 5.6, 3.1, 3.5; hind leg 5.3, 6.8, 3.4, 3.5.

*Venation.* Fore wing. Sc from base to costa at about two-thirds;  $R_1$  from upper cell vein at about middle, to costa at about 4/5; areole present,  $R_{2-3-4}$  from its apex, the veins separating from a common point more than two-thirds the distance from end of areole to apex of wing, the first two to costa near apex, the last to apex;  $R_3$  from end of areole a little separated from origin of stalked  $R_{2-3-4}$ , to termen;  $M_1$  from cell-end as far below areole as width of latter at that point;  $M_1-M_2$  cross-vein long, inbowed, feebly angulate at middle;  $M_2$ ,  $M_3$  and  $Cu_1$  subequally spaced at origins, respectively a little above, at, and a little before, lower cell angle; more closely approximated to each other than breadth of areole;  $M_2$  strongly bowed near origin;  $Cu_2$  arises at about four-fifths of cell. Hind wing. Cell short, about one-third the distance from base to end of  $M_2$ ; Sc touching cell briefly near base, thence free to apex; Rs and  $M_1$  connate from upper cell angle;  $M_2$  from near middle of cell-end, very little nearer  $M_1$ ;  $M_3$  from lower angle of cell, lower cell-end vein (between  $M_2-M_3$ ) costally faint but apparently deeply and angulately inbowed;  $Cu_1$  from near lower cell angle, almost connate with  $M_3$ ;  $Cu_2$  from cell beyond four-fifths.

*Philippodamias* belongs in a closely interrelated group of Indo-Australian genera which includes also the following: *Fleta* Jordan, *Crinala* Jordan, *Immetalia* Jordan, *Damias* Walker (*Burgena* Walker auct.) and *Scrobiger* Jordan. (Further discussion and references to these genera may be found in Hampson, 1901, p. 515; Jordan, 1912; Strand, 1912) This group of genera possesses in common: naked eyes; frontal protuberance reduced to a rounded boss; areole present, formed by the anastomosis of  $R_4$  with  $R_{2-3}$ ;  $M_1$  from the cell, usually distinctly separate from areole. These genera may be keyed out as follows:

- 1a. Mid and hind tibiae with a fringe of long, erect hairs.....2
- b. These tibiae with appressed hairs and scales only.....3
- 2a. Hw with  $R_s$  and  $M_1$  short stalked.....*Fleta*
- b. These veins connate.....*Crinala*
- 3a. Distance between origins of  $M_2$  and  $Cu_1$  of fore wing distinctly longer than that between origins of  $M_2$  and  $M_3$ ; males with androconial area of long hairs in a streak from base to middle of cell-end....  
.....*Scrobiger*
- b. Distance between origins of  $M_2$ - $M_3$ - $Cu_1$  subequal; no such androconial area .....4
- 4a. Third palpal segment nearly as long as second, with erect hairs.....  
.....*Damias*
- b. Third segment half as long as second, or less.....5
- 5a. Second palpal segment with appressed scales.....*Immetalia*
- b. This segment with ventral fringe of long, erect hairs.....*Philippodamias*

Its closest relative, rather than *Immetalia* as would be suggested by the key, appears to be *Damias* and the three genera, *Immetalia*, *Damias* and *Philippodamias*, appear to be very nearly ancestral in the group. From some form similar in structure to these were developed such later specializations as the fringed middle and hind tibiae of *Crinala* and *Fleta* (probably independently in each, despite the wide occurrence of this trait in the family outside the present group); the stalked veins  $R_s$  and  $M_1$  of the hind wing in *Fleta*; the very small third palpal segment of *Crinala*; and so on. Many of the characters useful and used in the classification of the members of this group of genera appear to have had independent origin several times, complicating the picture of their relationship.

Three genera of this group are now known to occur in the Philippines—*Crinala*, *Philippodamias* and *Scrobiger*. It is interesting that two of them (*Crinala* and *Philippodamias*) appear to be restricted to these islands, where they seem to be quite rare, both showing distinct affinities towards the two pre-eminently Papuan genera of the group (*Immetalia* and *Damias*). The third, *Scrobiger*, is a far more typical resident of the Philippines, being a southeastern Asiatic genus extending as far north as China and as far east as the Celebes.

*Philippodamias jocelyna*, sp. nov.

Antennae black, becoming reddish on distal third, more so ventrally than dorsally; palpus, frons, vertex of head, collar, thorax both dorsally

and ventrally and abdomen dorsally and ventrally, all black with metallic blue or greenish iridescence. On the palpus laterally at the base are a few pale brownish scales.

#### *Upper side*

Fore wing black, very slightly brownish, with a faint bluish sheen in certain lights, crossed from costa at middle almost to tornus by a broad, nearly straight yellowish orange band with sharply defined edges. The band curves abruptly but slightly downward just before its lower end, the angle on the inner edge of the band being about at the locus of lost vein 1A, that of the outer border between  $Cu_1$ - $Cu_2$ . The posterior end of the band is rather evenly rounded or faintly subangulate, ending just before tornus and thus leaving a slender black area between it and the adjacent wing edge about tornus. The band is of equal width throughout, about one-fourth the length of costa in width. The orange on the anterior edge of costa projects basad about half way to the base, visible only when the specimen is viewed from the front. Hind wing black, distally faintly tinged brownish, with a strong purplish-blue iridescence. This iridescence is especially strong and bluish in the base, its outer limit straight, rather vaguely defined, crossing wing from costa at about one-third, across cell-end to anal angle. Beyond this the iridescence is more critical and a dark lustrous purple. In the extreme base of cell  $Cu_1$ - $Cu_2$ , at the lower angle of the cell, is a small patch of orange scales. Fringe of both wings concolorous with the ground (dark brown-black, blue iridescent).

#### *Under side*

Fore wing as above, with these exceptions. Ground color slightly browner, the orange band more irregular, being streaked slightly basad on costa and costal veins and again on lower cell vein and on 2A. Its distal margin is more irregular, being displaced about one mm. distad from  $M_2$  to tornus, the posterior end approaching tornus still closer so as to leave only the terminal fringe dark. Hind wing as on upper side except that the veins are prominently green-iridescent and the small orange patch is absent. Fringe as above, everywhere dark black-brown, greenish iridescent on hind wing.

*Length of fore wing*, 29.5 mm.

*Holotype*, male, Matuguinao, Samar Island, Philippine Islands, 7.i.1952 (P. de Mesa). C. M. Ent. type series no. 330.

*Remarks*. This handsome species is congeneric with one which I described a few years ago (Clench, 1953) as *Scrobigerina(?) claggi*, from the Galog River, Mt. Apo, 6000 ft. Although at the time it was apparent that *claggi* was not properly referable to *Scrobigerina*, description of a new genus was unwise with only the unique female specimen. With the receipt of the present male of *jocelyna*, clearly congeneric, it is possible now to assign a generic name. *P. jocelyna* is distinguishable from *claggi* in many ways—absence of yellow on head and body; presence of the marked iridescence (completely missing in *claggi*), the orange spot on the hind wing above; darker orange of fore wing band and its slightly different size (broader) and configuration (straighter).

In addition to the foregoing pattern differences there are these slight structural differences. In *claggi* the r-m cross-vein of the fore wing leaves the areole at about one-fourth; in *jocelyna* it leaves at its middle.

Since only the female of *claggi* is known and only the male of *jocelyna*, it is impossible to know which of the preceding differences may be sexual in nature and which specific.

It gives me much pleasure to name this distinctive and beautiful species for my daughter, Jocelyne.

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